

DRAGON



USER

August 1986

The independent Dragon magazine

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Editorial

HERE we are — just got the new offer sorted out, and Sunday time bearing down on me like a ton of bricks ... Interestingly, instead, as I am writing this at the end of the week. However, thanks to Artscroll and the editors it shouldn't affect this August magazine. Fingers crossed, toes crossed.

I need a holiday

By the way, coming to a paper evaluation of Sunshine a few weeks ago, some people who should have done, well, it has had their June editorial messages yet. We have just finished one, and we're working on it.

By coincidence, Roger Mynors' report on his experience with Dragon 16's hard disk system arrived in time to prove what Paul Gadsby is saying in his new column. The power is there for the Dragon if you look for it.

Problems with hard disk fragility are universal, and not confined to the Dragon. Ask anybody with a hard disk, and watch them flinch.

And now comes proof that digital tape recording will add storage banks to computers in the longer term.

Newsweek explains an editorial next for reviewers. In reply to those who want the secrets of hem and tortoise

And the Golden Rule: Meet the deadline — by.

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Editor's publications

The quality of the material we publish. In dragon there such much art, as a result we can't say anything about the quality of the photographs that you can take with your Dragon. The Dragon computer was introduced to the market with a powerful version of Basic but with very poor documentation.

Articles which are submitted to Dragon Ltd for publication should not be more than 2000 words long. All illustrations should be 300 dpi. Please send us a sample of your artwork with the original. Please should whenever possible use Microsoft's pattern on plain white paper and be accompanied by a list of the programs.

Remember you are to submit every submitted article in progress, so please have a copy of your manuscript ready for publication and you should indicate a maximum anticipated progress.

Letters

Canoe in trouble

RE: PENTACIDE Canoe Dragon User July 1985

May I suggest to help throughout? Columns with the above programs which can qualify in helping the situation?

Unfortunately the following was incomplete at address 21445A. There is a JMF 21445A instruction but there is no reference to 21445A in any of the text that no corrections appeared in later issues of QJU. I can only assume that it was not only intended enough to type in such a mess of text code, even if it did take nearly two print to get round to it.

Recent letters to Mr. Creech requesting a listing of the missing code have failed to produce any response.

However the article referred to supply tapes of the program. I am curious purchased such tapes and would send me a memory dump running from address 21445A? It would be extremely grateful. Postage would naturally be refunded.

In closing may I make the observation that I find it distressing that a constituent would apparently take such a cynical attitude when asked to correct an error. Dragon users would be justifiably annoyed at purchasing a faulty program from a software house.

D. Smith

41 Huntington Road
Wolverhampton
West Midlands
WV10 8JG

YES indeed and no indeed you were certainly not the only person to type it in, as I remember a personal correspondence with several people concerned after Cancer appeared. I seem to recall that the correspondence had a happy ending, and then Mr. Creech played no part in it. Again from that, my memory is clouded in that I cannot for the life of me explain why this case was withdrawn, briefly no update appeared in QJU.

There may have been something in the nature of his having not initially withdrawn that caused him, and the program having

This is your chance to let your views — either a review, compliment and complaint to Letters Page, Dragon User, 40 Newmarket Road, Horley, Surrey RH6 0EP.

Every month we will be publishing one or two, courtesy of our suppliers, to the readers who send us the most interesting or entertaining letters. So send us your hints and your opinions, send us your stories and suggestions. Send us your best Dragon stories. What do you think we are, strong readers??



DOS complexities raised

I would like to comment on some of the issues raised by Alan Smith in the May Dragon User.

Firstly SuperDOS 120 up-grades to Dragon 32C as it is observed the boot sector is missing a copy of the direct, say the mode 16, as by no means 'normal'. Whenever a sector or track is written, it is copied to track 00 written in a copied to mode 16, where the original exists. This means that directory corruption is also copied, usually before correct, the action can be taken. I would contend that user intacted backup (and Recovery?) would be preferable otherwise the second copy of the directory is required.

Also SuperDOS 120 does not appear to do booting when using C:\OS12 as the Dragon boot disk is still present. The date for this and a method of

single file CLOSE operation, and a memory Dragon 32C, read on (20 May 85). Also the 'decompression' mentioned in the first of the article and either 'incorrect' status or some of the Dragon 32C bugs, not discussed. I comment on the memory or data loss with PRINTED 1 in contrast with C:\BASIC, understand, and numerous others too.

Finally with little effort the integrity of a possible to problem in Dragon 32C-compatible DOS 3.2 currently can affect DOS without the user and with the features Alan Smith would like (SOUPY equivalent, selective, single-track directory single file close, etc) and stay even when off. The remaining space can then be used for additional presentation programs compatibility, renamed and numerous data etc.)

Philip G Scott, #1 Dagnwood Drive, Poynton, Cheshire, SK10 3JG

satisfactorily with a combination of freezing whilst somebody else worked out or saw an error.

There is nothing in the file. It is a mystery. Can anybody out there help Mr. Smith?

SV especially author doesn't eat any bugs which come up after publication, and in the rare case where we have had a seriously bugged program or very bewildered readers as a result of something we have published, the authors have tended to withdraw it. Unfortunately, in this case of a program which has published five years ago, we have tended to withdraw the it may be a perfectly fa-

present explanation for Mr. Creech's silence. He may be of age to be a senior colleague or something round the world, he too may have lost and forgotten his own program, or he may be so fuddled by the terrible consequences of the missing routine that he has become a hopeless recluse.

On the other hand if he is one of his mates is reading this, could you drop me a line and let me know? We aren't going to need the Dragon boot disk round to take the change back — hopefully

Tandy response

On your letters page you said you would like to know how Dragon and Tandy owners would feel about you sending your responses into Tandy country. I can assure you that most owners would be very pleased. I hope that if Dragon and Tandy owners get together a lot more, both machines will be in use no longer than they would trying to carry on in isolation. It would also help if software is released tailored to both machines if at all possible.

J. Challenor
81 Ryton Place
London SW11 8SD

RAM on rampage

FOR some while now my Dragon 32C has had an annoying fault. The problem is lack of volatile memory. When I bought my Dragon I could recall the Demo—there was insufficient space I pressed Dragon Test, who suggested that I Format Disk Test I did and up to see that playing A game of snooker occurred. Based on with the fault for a long time.

Somebody always suggested that it could be a virus which had got my wife who is a psychology student. In view of the obvious little I have based on an issue of and replace them with regular. He took several lunch hours over the job, but in the end I had all my chips in the original positions. He then backed off the tracks and noted that where I had tracked a dodgy

I took the board, plugged him and turned it on. Sure enough it worked but I still had my old memory. I now took a new 32M and fitted it to the position where I was ignoring me that tour, as the tracks goes up there and the reading just doesn't it doesn't. At about the third from the end I plugged the new one in and PRINTED MATH and to my surprise up came 26207. I

the accompanying book, and that's where I found the correct figure for a 2000 dragon (The Basic User is for the remaining 2000s).

I have enjoyed Dragon User for quite a while now obtaining many useful tips from it and I am very pleased to be able to pass this one on to others who may be in the same boat as I was. It was given — in the course of my problems — an answer which I feel is a sensible one but if anyone can make use of it I would be pleased to pass it on, for the cost of the postage. Finally has any one out there in Dragon land got the book 'Inside the Dragon' which may be lying around unused. I would like one in my charge for other users.

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WA5 0PR

users should know about. If DOS 6.01 is used in command mode, the computer sometimes hangs up if it is a 320.1, and I had a file in the same name as .320.1, I sometimes get a WP error. Once I've run the computer long enough and executed the disk, Dragon recognises the file as in the directory it was loaded when loaded.

Finally one of my new discs developed a CD error on one file and an RP error on another. I am not sure what was corrupted exactly though. All this happened in the space of five minutes when I left the room and returned.

Davidson Bag
1999ers 2000s
Comics Road
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PR5 9PR

underwear which connects 'points' just did not recognise clearly. In Dragon 2000 the numbers can be pretty long, but no spaces can be left in them.

Perhaps this short note will prevent a few mistakes.

Also in the final column of the article, the instruction 'Dragonists should look like Dragonists' — the space is inserted.

Best wishes to you and DU under the new management.

David Rooney
7 Heath Road
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THURSDAY Class. Your Rating was quite alright, apart from being dramatic, and although my thoughts are the pointers to make the feelings as natural as possible. In that case will very fine drama, like the tale on cameras, tend to blow it out.

In fact, this understandings do show in 50% of the lines, but is it possible that they could be overlooked and your rating is surely.

I hope that the understandings in your letter above, is reproduced correctly — but owing to the vagueness of typesetting, understandings frequently get lost, an necessary to people who write about language like OS-Dragon GL, SuperDisk. It did get lost, so we had to put it in especially.

Disc hangups

I have been a regular reader of Dragon User for a while. Last year now and have seen the quality of programs and articles improve greatly. I have a problem I need only look in past issues and usually find the answer so I would like to thank DU and of course all the companies that have contributed to supporting Dragon. I have looked at the website on DragonBBS but my helpful pal Bradley Paul (D'Arcy's Disc Doctor) which prevented me from putting my faith.

After having returned from the software迷者 I decided to purchase a second hand 320.1 drive. With the drive came a number of discs with some very good software, but one disc disconcerted me which I didn't want so I put about deleting the disc without including the file type. The result was an corrupted disc.

I have tried running some of my own programs and got nothing but CD ROM and TV errors. Come back to this. I have just discovered that I could the 2000 version program and was able to recover all but one program.

Until I have found some errors in the 2000 version I will be publishing in your magazine, which other Dragon 2000

RAE course

HENDON College runs a very successful course for the Radio Amateurs' Examination (Calls and Quals '95).

Your readers may be interested in the course, which runs on Tuesdays from 10.00 to 11.00 at Hendon College, Church Road, Hendon, NW4. The cost is £95.00 (post and telephone calls not included) and I have about 10 spots left. I can also help with the phone number for inquiries is 01-8900200.

We also offer a range of full time and part time courses in electronics, including CAD ECA-Electronic Servicing involving classes.

O Helford
Senior Technology Lecturer
Hendon College
London Borough of Brent

Basic09 print alarm

THURSDAY I'm printing my art disc Basic09. Dragon's otherwise impressive pic courtesy of the pictures of the poster I think a few words to help if you print the following:

Basic09 (pic 1000) can extract a simple program as an interrupt character. Therefore if anyone had a job of using it they should be married off at the

for Dragon User we would have the speed to match or surpass the original. If the problems of course are in the hands of suppliers for technical and financial. It was a long time before we realised that by the time we had to import software and hardware was by now miles from people advertising in DU. After purchasing the initial partners etc, we decided to take a word processor and this was followed some time later with acquisition by them of others.

Since my son (his older brother—a schoolteacher) recommended a computer as a career about 18 months ago we decided to extend the model by buying an upgrade from 32 to 64. For this we contacted Computerland. They did a first class job and considering it was a classic machine, in my opinion.

Myself will be 63 in April and we agreed to purchase a monitor for her birthday so we had been using her television until then. I thought first that it might be more convenient to buy one locally and avoid the necessity of delivery costs but, as to be expected when I approached the computer shop in Luton, they did not want to discuss about the Dragon with me. So I can't get you anything for the Dragon.

There isn't one for the Dragon and all the rest. I should have known better by now so I went back to the local Computerland with disastrous results.

I phoned them on Monday March 21st to check their prices and availability and the nice friendly staff agreed. They said they would have to order one as they did not actually stock them and the price they quoted was exactly the same as I had bought the same 16 months previously.

I paid a visit on the 20th on Tuesday March 22nd and the monitor was delivered to my door at lunch time (Wednesday March 23rd). The monitor came direct from the manufacturer and the cost—computer.com £100. The colour is vivid on Friday March 25th. Thanks to be the most efficient service I have ever experienced and I feel I simply had to write to tell you. If the patient British post service ever goes public I pray it is someone like Computerland that takes over.

P. Stockwell
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DRAGONSWORD!

Paul Grade takes a monthly stab at setting the world to rights

ON THE 29th of last month I received a letter from Mark in charge informing me that the new newsletter was the 20th of the month and as I happen to live in the middle of trying to answer a couple of dozen letters, repeat my overworked platitudes and get the PDUG newsletter ready at the time I often firmly assert that it's practical propagation to me. Hence the delay. If we only had a mailing list — story about for tomorrow.

Of course, I haven't a clue about what's supposed to be mailing list. Returns can receive technical advice or technical and forums can write editorial comments, but what does that leave for me? Usually, rarely write to Update, which means the problem must be serious if I'm compelled to do that. I can also write when I feel without the risk of deriding mailing out my first results.

I would be nice to be able to fit 10 pages with details of all the new features back up to Update, the Oregon User newsletter, off course, and technical information would have to be written on all pages and I'd have to use very large type.

Now I know Oregon Users did a nice job of marketing the newsletter and a lot of software companies, recognized that people would pay only prices for software, but that is only a characteristic of The Decline and Fall of the Oregon. The new creation and, I believe, that it has many supporters from a wide cross-section of business. Who gives it business? How many former Oregon owners do you know who have switched to other machines? A couple of years ago they were choosing the Oregon in honor of the BBC, a little later it was the Master of the Apple, and currently it is Amstrad ST or one of the cheaper PC clones. After how long the first part of the generation difference of those who chose Amstrad ST actually taken the trouble to tell us to take the one they already had? Of course I follow business. It's hard to believe that I can't change. They didn't think I'd ever manage to find it was not the memory available on the Oregon, but they were sure that they needed at least 112K bytes and I assure you we still had the memory about reading a better machine for business, mainly from people whose computing began and ended with reading their Access page books.

If they needed that memory there was no motivation they could have the space available on disk, after all that's exactly what most of the business systems do, there is no need to have several pages of program. Most of the time, I know that there are exceptions, and that some people have seen the Oregon as it is, but, and I know it still doesn't give them what they need, and in hope of some changes is justified, but they are a small minority.

Subscribers of this have told me you? Quite a lot, because you subscribe to Oregon User and that means that you've eventually decided that OUS had to go into that publication had dropped. As I figure

that was too low for them, pay their original London company expenses for the magazine, now Bob Morris writes what must be good Dragon software and is selling over 200 he is writing excellent software as much as anything else. If the Dragon manual gets any smaller it will just not be practical to have anyone even try to produce software for it.

Return your paid-up copy of Decline of where you work your plastic money making — you didn't like me pay by mailing. This is quite a simple process and straightforward — save some discount if there is no return address — not even a Government Business Mailing, and I don't know how to do any mailing here. By thinking about who you have a computer who you need it for and what advantages the have, it's very interesting a medium-sized business and having local research. This will I think that a Dragon can do that other machines can and do you really need ST graphics when you could it even managed to close a part with the machine you have? Do you really need Monitor resolution? I? Do? Do you really want to implement what's hidden up in placing there's a nightmare to program, non-commercial software that needs a second mortgage to buy and maintain MS-DOS and CP/M built out when the Dragon is first installed?

Now to the point, are you really no longer to admit that you own it even want to program one of the current machines over again? That's why you've developed the business, unlike Imagination that sticking with a machine that can do what you want.

Or, don't get the impression passed, I know I'm breaking the rules by criticizing the jester, but look at it from my point of view for a moment. Four years ago started the PDUG, and then we cut away from the Amstrad ST and the Amstrad ST was a thousand members. Dragon user has been around even longer, and on a good day has about three times that number of subscribers, and the local Dragon user group can just about make up another 200 between them. Some of you suggest there meeting lists stretching back years, but how many people on them are actually buying software?

You don't need a computer for you to work out that this doesn't really add up more than the thousands of Dragon actually up and running. Then 10% of Oregon computers are very close to six figures, and even allowing for natural language (Dragon which were built out. Most of them, or otherwise, that still leaves a lot of machines unaccounted for, doesn't it? Some are probably owned by rugged individuals, those who also I used groups or responses (more than is generally imagined, according to my knowledge of rugged individuals) — but I bet what happened to the rest? Are they off being used as cash registers or price up the best? My guess is, I had most of them were con-

signed to about a hundred because the owners who've got tired of apologizing to Commonwealth owners for owning them, or tell that they simply had better business in their more-favored status symbols.

What you will then there is still a lot that you could do to give the Dragon a boost. Most of the minor releases still on control they point, notoriously large memory, fairly good of improvements will work. There nothing the usual hyper lead that is extremely very important. Now, there's not a lot you can do about attacking the Dragon's RAM space. It can be hacked up to 128K without too much trouble, but that isn't going to persuade the types who imagined their Dragon is a bit when they bought it ST to get it down again. However, if there was there software available (and who knows which could be the Dragon instead of the current that comes I think you'd find a lot of Dragon's coming back out of the wood work. Programs aren't some consider (just), some of them are very basic (especially *Speedup* from Corporation) and if there are people like you, they could be you.

You don't need to be any particular type of user, or even some kind of program. In fact it's probably better if you are a micro-computer, are very simple, needed much time and they don't always take kindly to classic classic programming.

I get tired of hearing the same old lines, which mean about lack of software, lack of support, etc. Paying nothing a machine is capable of learning to write good software on it and work with Dragon have a big advantage over most others in the industry are also based on Amstrad machines ever purchased, so why are you reading this instead of writing programs? Of course it isn't only the soft wear side that things could be done to make the power and benefit more attractive to the individual. Come on, our own access is far better grabbed digitizers. They aren't that useful in itself, and even old images like the old Commodore 64 had them available. So why doesn't someone design one which is replicated to a pin (local) interface, one which could be used with the Dragon and other machines with a change of software? I know that a lot of Dragon owners use good electronic programs, some of them are interesting like *Basic* programs. So why don't they help themselves and the Dragon by giving it away? The Dragon lacking access is that it doesn't require dedicated peripherals, it can run any kind of joystick or game drive or tape cassette. It isn't a home machine at all, so what's wrong with it? University design effectively needs different drivers software to adapt to different machines? Then I would think the Dragon is a serious rival to most of the current machines, with the added advantage of being a less expensive CPU, and at home, but why not give it a try?

And

64K in two 32K pages

P D Smith consults Motorola about the real SAM

I have written this article to complete the discussion on the SAM2020 (M68680) RAM chip given by Mathew Lodge in the August '87 issue of Dragon User. In general Mr Lodge says that he doesn't know what the RAM registers at 0000 and 0FFF does. I thought I knew the M68680 RAM chip better than Mathew and this clarifies the use of these registers.

The question I referred to is about you to use the RAM chip in a 64Kbyte computer (such as a Dragon 32) but having two 32K pages addressed from 0000 to 0FFF in fact what happens is that in page type 0 (ROM at 0000-0FFF) the A7 bit of the RAM addresses is replaced by the P bit from the port. This means that P is written (and) then any address in the RAM will access the correct byte. For instance if you access byte 10000 you will use byte 10000 of the RAM. However if P is not logical 0 then any access to the RAM will access the byte in the second 32K page (addressing type 10000 will in fact use type 10100 (10000 + 00000). That is really quite difficult to explain and is best understood by some example programs.

P is addressed by accessing RAM register P0 as can be seen from table one. So on P0 (the P05) address of P05 with any value '0' will, P you must P04 set these 87FF04 with any value.

Check the mode

There are several things to note about the two pages mode memory work from the map type 0 that is the 200 mode of a Dragon 32. If the page mode will only work if you have 64K in your computer. It generally happens if the P bit will remain at high level until after address is not used. If you set the P bit without preparation the computer will spontaneously crash (as some of you will have learnt out by now). This is because the computer will still be generating interrupt when you have just used vectors and the BASIC interpreter uses vectors in RAM. Because these vectors have suddenly disappeared the computer will undoubtedly crash.

The test program is the answer to the problem of the computer crashing. This copies the whole of RAM into the second RAM page, so that when the pages are swapped BASIC will continue and nothing has happened. Note that the contents of 0000-00 to 0FFF cannot be copied into 0000 to 0FFF as these latter addresses are remapped by the same to 1024 the same and the memory mapped. However look from 0100 to 0FFF can be whatever you like in the new page of memory.

Before you run testing code you must have put the RAM of memory to keep the 0FFF otherwise the system will just refresh and the computer will crash. To test the page system you must now set the P bit by P05FF101000.

2700		PROGRAM 1
2700		COPY RAM (00000-0FFFF) TO
2700		RAM (10000-1FFFF)
2700		PAUSE = CANNOT COPY TO RAM
2700		8FFF0 TO 8FFF AS THIS IS
2700		USED FOR I/O, SAM AND VECTORS
2700		
2702 3401		SCOPRH P04:0C
2702 1000		ORCC 857B 1010001000
2700 7FFF0F		CLR 8FFF0 1SELECT RAM
2707 000000		LDX #0
270A 10000000		LDY #000000
270E		
270E ED01		COPYLP LD0 ,Y++
2710 ED01		STD ,Y++
2711 007F00		OPX 857F00
2713 20F7		BNE COPYLP
2717		
2717 7FFF0E		CLR 8FFF0 1SELECT ROM
271A 0001		PULSE 1024 AND RETURN
271C		

```
10 * BASIC PROGRAM 1
20 CLEAR 200,4H7FFF
30 FOR I=0000 TO 3872*2
40 READ A#
50 A=VAL("8H"+A$)
60 CS=CB+A
70 POKE I,A
80 NEXT
90 IF CB<>3293 THEN PRINT "ERROR IN DATA"
100 SOUND 10,101000
100 PRINT "DATA OK"
110 EXEC 3872
120 DATA 34,81,1A,5B,7F,FF,0F,0E
130 DATA 0B,0B,1B,0E,0B,0B,0C,01
140 DATA ED,A1,0C,7F,0B,2B,07,7F
150 DATA FF,0E,35,01
```

BASIC PROGRAM 2

```
10 POKE 8FFFD3,0
20 GOTO 20
```

The computer will now appear to have crashed but if you try a stored command such as SOUND 11 you will hear a brief bleep showing that the computer is still working. The reason that nothing appears on the screen is that the RAM is still displaying 1024 (0000) the last location addressed is writing to 0000 000027 (but still notes that it is writing 1024 0000). In theory the problem can be solved by letting user to display the correct addresses by setting

P05FF101000. This will work but not for very long as BASIC will suddenly need it when the next character is to be printed.

To use P05FF101000, it will have to be done blind but it is often enough to be done. When you run this you will see all the text that you have entered in your pages when you thought the computer had crashed. If you press F101000 the computer will respond 1024-1025. (A useful note here: Create does not read the text addressed to it, it just finds the line colour.) so Drive device analysis will be fine.

If you now recall the "1024 BY P05FF101000" you will see that the screen is working again. Also note that programs run

Table 1 - **MEM. REQUESTS**

INPUT	S	TY	MAP	TYPE
PF00	C	E1		
PF02	C	E0	MEMORY	
PF03	C	E0	SIZE	
PF04	C			
PF05	S	E1		
PF06	S	E0	DPB	
PF07	S	E0	DATE	
PF08	C			
PF09	S	E1	DISPLAY	
PF10	S	E0	DATA	
PF11	S	E0	CONTROL	
PF12	S	E0		
PF13	S	E0		
PF14	S	E0		
PF15	S	E0		
PF16	S	E0		
PF17	S	E0		
PF18	S	E0		
PF19	S	E0		
PF20	S	E0		
PF21	S	E0		
PF22	S	E0		
PF23	S	E0		
PF24	S	E0		
PF25	S	E0		
PF26	S	E0		
PF27	S	E0		
PF28	S	E0		
PF29	S	E0		
PF30	S	E0		
PF31	S	E0		
PF32	S	E0		
PF33	S	E0		
PF34	S	E0		
PF35	S	E0		
PF36	S	E0		
PF37	S	E0		
PF38	S	E0		
PF39	S	E0		
PF40	S	E0		
PF41	S	E0		
PF42	S	E0		
PF43	S	E0		
PF44	S	E0		
PF45	S	E0		
PF46	S	E0		
PF47	S	E0		
PF48	S	E0		
PF49	S	E0		
PF50	S	E0		
PF51	S	E0		
PF52	S	E0		
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PF56	S	E0		
PF57	S	E0		
PF58	S	E0		
PF59	S	E0		
PF60	S	E0		
PF61	S	E0		
PF62	S	E0		
PF63	S	E0		
PF64	S	E0		
PF65	S	E0		
PF66	S	E0		
PF67	S	E0		
PF68	S	E0		
PF69	S	E0		
PF70	S	E0		
PF71	S	E0		
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Crossword

The Great Dragon Emperor has sent his hairy-necked
leather dragon to provide fiery air to cleanse land and sea.
Mythical and most fearsome, it comes—oh, how it comes
—to those who live in the land ruled by the Great Dragon.
Great Emperor, Tang Almondine (Copperton), who
would like to make his new home in the golden dragon,
these are my best and the chosen of both. Please
know, my Lord, I have seen no one resembling
anything since these days of old.

www.elsevier.com/locate/ijcmpe

There will be a couple of free repeat shows this October, a megabooth exhibition for the last concert in November and the last such month. You can try booking which happens October 20, 2010, or November 20, 2010.

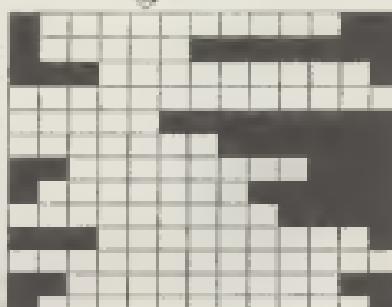
And you can't wait until you're stronger than you are now — you can't wait until you're a professional or a public speaker or a good leader or a good teacher.

- 1 and 10: Initially the *luteinase* gene is silent (2.2-2.5)
- 2: Sounds like the tree was recycled and re-measured (2.2)
- 3: C1 meadow/charge microhabitat site (2.6)
- 4: The Eagle - tree precess (3.6-2)
- 5: Deciduous *luteinase* (2)
- 6: Flagellophagy for tree invaders (2)
- 7: Film indicates flagellophagy capability (4-4)
- 8: Chrysomya 3.1 = 150% (1)
- 9: Topmin football (2)
- 10: See 1
- 11: Increasing deciduous in this large hollow? (2-4)
- 12: Return and see this if you get lost (2)



by Terry and Deborah Probst

All this month's answers are names of Dragon software. When the crossword is complete, the column marked with an arrow will spell out a phrase.



Dragonsoft

New software for your Amiga should be sent to Dragon User,
49 Alexandra Road, Moseley, M13 4EP, UK.

Continued from page 6

about or interesting, all of which are serviceable, and can then be stamped with a scratch-dump routine at the end. Is quite an achievement.

Having experimented with this program, but reverting to my earlier comments, I do believe that David should present the instructions in an expanded and more readable manner, perhaps in the form of a booklet using what he has already written with a couple of working examples that the user can follow with little change of equipment. In this way I feel sure that his excellent program would be used far more often and put away. One could well be tempted to cover and in this case the cover detracts from the quality.

P. H. Pearson



Beware of the Aardvark

Program: Aardvark

Supplier: Biggs Software, 80 The Chard, Porthcawl, Bridgend, SA10 8PF.

Price: £4 including p&p

AARDVARK Software is a new title but the man behind the Dragon is back with his first

master, John Foster, has been involved with the Dragon for a long time. Aardvark has come up Ooga Dooga, he has set himself up as Kanga Software and is working on games for several companies, including the Dragon.

In Kanga's first offering, *Aardvark*, you play the part of a maggotman — a highly intelligent pyromaniac. You're an efficient defence system. You must fulfil your duty through key limited resources: chaotic firebombs, laser-bombing units and large mutant vandals. You can pour hellfire everywhere in a moment — and I mean a moment — and I mean a moment. You also have a bomb bay and a pyroplane, which you must skillfully use to escape from the pyramid.

You must use tactics of the stealthy aardvark to progress further along the pyramid.

At the end of each floor should you reach one, you must battle with one of the nasties who appear throughout. This requires quick thinking and an even quicker hand.

After dropping down the hole at the end of each floor you continue to the next floor.

Linking is a totally different ball of fish. Here as well you must constantly move and change direction to avoid being shot.

It is well worth the effort to play this game, as it is a very challenging game enhanced by the use of a mouse.

You must learn how to move just one hand by keeping an eye on the joystick and by no means as it is as easy as it may sound. Then mastering of the robot's movement is essential if you are to complete the levels.

The first few are particularly difficult if you are careful. On this score you must overcome all the obstacles, who fear of you, resources, who are afraid of you, and numerous pyromaniacs that try to exceed.

A second achievement you must obtain is to reach the top of the pyramid by firing at or shooting to destroy one of many express.

The aardvark battle comes at the end of each floor. Here you must destroy one of the nasties which appear throughout. This requires quick thinking and an even quicker hand.

After dropping down the hole at the end of each floor you continue to the next floor.

Aardvark is a totally different ball of fish. Here as well you must constantly move and change direction to avoid being shot.

Aardvark is not a terribly difficult game, a few hints can help you progress. You want to progress quickly. One good point about the game though is that when you are killed you continue where you left off.

If all you have is five lives and while this may seem a bit, it's surprising how quickly they disappear.

The graphics are in 3D (the third part) and are reasonable. Never before has a game achieved graphics of *The Masters of Mankind* (*Phantom of the Gods* and *Book of the贤者* quickly). They really have to be seen to be believed. As you progress further, they get better.

The game is developed in **PMODA SCREENT** 3.0 graphics. Perhaps **PMODA SCREENT** 4 graphics would have achieved a better degree of smoothness. As it stands though, the screen refreshes are still a marvel.

The music is well written and I liked accompanying the game of the highest standard. I enjoyed the first few levels but preferred the music later. It is also a very challenging game enhanced challenges, enhanced music levels to the limit. I can say with hand on heart that rarely will you find a game as good as this one for under £10.00.

David Minton

Imperfect world is nearly a perfect game

Program: **Utopia**

Supplier: Pulse Software
Price: £19.99

UTOPIA is another game written by Starship Software and responsible for *Flow Doll* and *Starship Spy*. But this game is no masterpiece compared with *Utopia* there have game and undeniably their best.

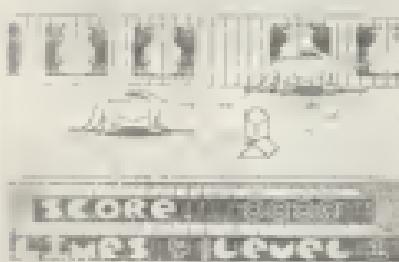
Utopia is an imaginary state with perfect political and social conditions of consideration. Until recently (On the game's occasion) the name made doily of the same name was just that. The *Utopia* Preference had it up to an ideal political place, but now it has taken it to a state of despair and as a result is no longer the perfect place it used to be.

Unfortunately, however, the inhabitants of *Utopia* are unable to leave the place because of its complete distance system. Originally they were designed to not infringe on the welfare of the society but what the Federation fails to understand is that people who live here exist as a result equipped with no means of escape.

The task of escape from *Utopia* has been given to you. As the master of these people, you must guide them through the various star fighters, stolen from the Federation through *Utopia* in complete defiance system to freedom.

The interstellar fighters in your possession are no advanced

Continued on page 10



UTOPIA
Pulse Software
£19.99

Hard but not too hard

Roger Merrick links OS-9 and a hard disc drive to the Dragon.

After 10 days recently I read impressions of Bytegrade 1 shared some of my frustration on using OS-9 on the Dragon. My criticisms, however, should not be seen to imply dissatisfaction with OS-9 or the Dragon, but a whole combination of the two. Having worked with it now for some years, but not exclusively on my main tasks, I think OS-9 is a wonderful operating system but using it on the Dragon has徒然地 a number of problems that I find very irritating.

Floppy discs

I suppose I should be grateful that OS-9 no longer uses single density drives, and I should be thankful that I do not use a DCCD with only 30 tracks per disc. I do recognise that back in the good old days of 1980, a single-sided 40-track was the most cost-effective solution to providing a floppy disc system for the Dragon, but I feel cheated now by the rapidly ever-increasing size that two drives were really essential for OS-9. Of course, Dragon's Chris had implemented multisection and the release of OS-9 and it was fortunate that they got the OS-9 software released before the cut-off. That was in fact the last-ditch effort of a struggling computer company who really did deserve to carry on their customers' pain, but this, perhaps, was repaid by the fact that we are still here five years later. I have never had that multisection feature received the licence fee from Dragon Systems for the OS-9 software so there were no legitimate issues, but still leaving "Version 2.0" as registered users' Mathematics in a state bordering on the ridiculous.

However, still being in the market for the standard double density single-sided floppy drive does not provide enough storage to run a reasonable set of commands, an application and data on the same disc. Single drive operation is an immensely time-consuming, requiring modules to be loaded in memory, data directory to be changed, etc. Working discs require repositioning and controlling customised BOOT discs using OS9DOS on a single-area system is difficult.

One simple solution is to add a second drive if the drive switch on the original then colour version is possible. The original Dragon Basic release of OS-9 only supported the single-area alternate format 512 bytes. Pseudo-DOS includes file device descriptions and drivers that support double-sided and 80 track formats as well. A double-sided 80 track also quadruples system storage offering 1.38Mbytes per disc. But floppy disc operation on OS-9 is still unsatisfactory. The file system buffer stops working when the disc is being re-loaded. At first I took this to be poor

software writing to the device driver, but now I can see it as a problem with the hardware. Also, increasing a reasonable amount of workspace means having a few modules permanently resident in memory as possible. This emphasises an operating system's disadvantage for the need to draw loads on OS-9 — the time spent re-loading data to load modules.

Having seen Dennis and colleagues with PCs using harddisc systems has provided invaluable insight into load cycling, storage, and access. I thought well, the answer to the problems of OS-9 on the Dragon is to add a hard disc. The operating system is sophisticated enough to handle it. Then you could have all your commands and applications available in the touch of a CR/LF.

Knowing nothing about harddiscs, I searched for a supplier specialised overdrive and the peg system available for the Commodore 64 and concluded at the cost of bringing one over just as possible that it would work on the Dragon. Consequently, at one time I passed to him one printed circuit board for re-implementing the (now OS-9 version) of the hard drive support that might have been based, and they abandoned the project. People would not be prepared to pay the cost of such a system, it may tell me. So I turned elsewhere for the Hardical and Hardi. I visited Martin Vernon of the latter, anyone who could do a hard disc interface. Martin built a name come up and some time later I contacted him.

Hard disc system

The harddisc system consists of the following components. The Dragon interface board, hard disc controller board, power supply and hard disc driving soft wear. There is a small interface board held inside the small interface board held inside the Dragon mounted on the shoulder of the lower case, above the read button. This board contains four components and a ribbon to the Dragon pads by several connections. A 20-way ribbon lead out of the disc to a hard disc controller board (from a 160 pin connector) in the next section. The board mounted on the Dragon is very simple. Ten connections to the Dragon you can see are more complex.

But this is a little Dragon specific hardware. Harddisc requires the interface and power supply as the customer can provide their own. If you intend re-implementing a hard disc, you must take into account the number of bytes, power consumption, load times and changed buffer map. If buying a second hard drive, be as careful in choosing. See my earlier article for more detail. If you can't do any maintenance on a hard disc the way you can with a floppy drive in my

case, I have acquired a 10-megabyte Seagate half-height drive in the same size as a half-height floppy drive. I had a patcher to add to run it from the floppy power supply but the starting current load of 3.5A simply was too much so I acquired a more powerful standard model type of power supply. Generally speaking, 1000mA of supply is measured, what they are specifying, so I suggest 8A. A more or less standard ESD.

The Dragon interface board includes a controller chip and data transfer takes place of another was arranged by me above M6000. It is possible, however, with appropriate software, for the hard disc system to be used by Plus, OS-9 and native DragonOS. However, Dragon only supports OS-9 drives. He feels and I think that to an extent that only under a sophisticated system such as OS-9 is it worth using a device such as a hard disc.

Set up

Having had the interface installed and powered, the controller card and power supply, I was unable to get up and running. The first thing to do is format the hard disc. A utility disc of 92 sectors is provided because if I format the BOOT command works in DragonOS, it is unfortunately necessary to BOOT from floppy to format what I had. The message OS-9 version 2.0 Welcome to Dragon's OS-9 system (granted not

Having seen friends and colleagues using hard disc systems that provide megabytes of fast online storage I thought, well, the answer to OS-9 problems...

Using 10MB from my standard system disc showed the benefits of the extra disc space. Between just HD00 and HD10, in addition to CDSK and CD00, the 10MB showed HD00's size as approximately equivalent to the CDSK module.

It was then necessary to format the hard disc. The PCFORMAT module on the using disc is vastly different from the standard system module. I will be informed about the hard disc — number of surfaces (heads) and sectors. This information must

be written, no incorrect data could in fact damage the hard disc.

A further piece of information requires the so-called *interleave factor*. This relates to the fact that physically consecutive sectors may not have consecutive addresses assigned by the system. This is due to the fact that in the time taken by the system to load and read a sector, the spinning disc has moved an entire circumference and an

entire command. The contents of the sectors addressed on the fly of *Byteplay* are transferred to the hard disc after directory *SYL0.D*. When using the *CDP40* program, this can be constructed with the *CDP40* command, or in *hard editor* to *CDP40* over from the master *CMOS* directory to the *SYL0.CMOS* subdirectory and then transferred there if necessary. Otherwise, *hard editor* has the directory structure organized around it for a purpose rather than being trying to work on household accounts. *Mac OS* has a directory *HOME/HOME/ACCOUNTS*, rather than *DATA/DYNAMIC/ACCOUNTS*.

I chose to construct a master *CMOS* directory from the system disc and a number of subdirectories representing each floppy disc that I subsequently stored on the floppy disc (by *CDP40*) — *data for HASCOR one for SYL0, etc.* My *CMOS* discs now store I saved hierarchically under a directory of *OS/9/OS/OS/OS*.

For understanding better, please be aware of 256 characters (keyboard buffer length) and to reduce opportunity for errors when directory names are to be preferred. Another point to bear in mind is that every one file with a given name can never be in a directory as it is being considered a module within given name. In a directory, a revised updated module being loaded in from floppy will not be shared. *OS/9* will repeat an error *NO* and carry on. The user must then manually remove the old module, update module and load the module from floppy.

In use

Because of the device independent I/O structure of *OS/9*, all commands that report the state of a device can be reduced to *IO* code as *CDI* *FREE* *IOcheck*. The first point that becomes apparent was that many applications had been hard-coded to refer to *IO* for various reasons. *Byteplay* looks for the appropriate specifying label on *IO* *SPILL* looks for the appropriate *IO* *DO*. There are new approaches to dealing with this. Either reverse the *DO/IO* order to *DO/IO* or *IO/DO*. This will cause problems for floppy and operation of *CDI* *Utilities* etc. after using *IO* services for references to *IO* *Programs*, and *pass* to *IO*. *DO* *Services* at the end of *DO/IO*. *CDI* *check* should be used to create a *BOOT* file of a minimum number of modules. Once all applications are packed in *System* referenced to *DO* with *IO*, it is not necessary to refer to the floppy and all. Therefore *CDI* can be left out of the *OS/9/BOOT* and loaded into memory from the startup file *file* by *byteplay* to be loaded when not required. Having created *directories* for all my *OS/9* applications, including separate *directories* for *42 OS9* and *CDOS9*, I have used approximately one quarter of the space in my 10 megabyte harddisc. This is with substantial applications on files.

A major advantage is speed in use. There are two aspects to this — the data transfer rate of the hard disc is a major effec-

tive track access (the one last-minute hard disc then with a floppy for reading are speeded up). Memory and Mac are saved from memory and much faster at booting than with a floppy.

Disc snags

Secondly with all commands and applications on-line and accessible via *CDI* there is no time spent swapping discs. For example in *word 8* it can *BOOT* up load a previously built file to call *MSW9/OS* and *assembler* *SYL0* and the floppy device description, load *910.CD* — movement of *G* program, save and compile it, go back to *SYL0*, *assembler* *MSACD9* program which calls the *C* module.

The special *CDI* which modules is reduced into memory means that the storage device is treated like an extension to *RAM*. This is how the *64K* limitation can be overcome. *Byteplay* use of *CDI* gives me a different perspective on my *Power Mac* computer. My *Dragon* became a terminal to an *Apple* *OS/9* computer. Now with the hard disc, the *OS/9* computer needs a more definite form. Since I use *CDI* system, by adding so much on-line storage (please see the opportunity to personalise my *OS/9* system, the peripheral device takes on a crucial importance).

There are usage of course. The importance of the *file* that is the *file* that is also proportional to its *image* (I've been running the system for approximately one year now. But I've never understood it before because I have suffered problems not in the hard disc going down, but in getting away a difficult and time consuming problem. I ended up not doing it and then the system crashed and that affected you are in right place). *Byteplay* *up* *discs* is even more trying than *switching* *up* *floppies* and the consequences potentially many circumstances due to the large number of users capable of being stored. However the principle that the *Mac* which you do not always the hundred to systems is equally true of *com* *apple* over *Power Mac* (not loading).

However *Byteplay* behaviour was on the performance of the *Harddisk* *Formatting* *capacity* *combination* and there were a mix of impossible results (compared to current read times) and some good results. *Dragon* had revolution the clever so I intend to wait and happen on the performance of the new variety.

A number of people, users of other computers, have looked audience when I have described this system. Why, they say, would you want to build a powerful peripheral card in a rather simple machine like a *Dragon*? This displays a lack of understanding of the power of *OS/9* and the different approaches to computing there by. The combination of powerful operating system and hard disc.

The total cost of *total* *OS/9* — *CD9* may seem a lot of money, but if you are an *OS/9* user have a significant investment in software and a promising spirit, you may want to do.

The importance of a hard disc is proportional to its fragility... since back-up is time consuming, I ended up not doing it, and lost a lot of work (serves me right).

the physically consecutive sectors were in position, time could have been wasted. More efficient to read the whole file in under the need of the time. Getting the interactive *Mac* obviously requires obtained knowledge about the reported operation of the system. This is not available, so back to the default values, making a mental note to my different interests: factors in subsequent format appearance. Then the operator must choose logical or physical format. The former is equivalent to formats without verify whereas the latter will verify and look out any unusual tracks.

Not only you is important the physical location is selected. All though I'm formulating process works much faster have got a floppy system with as many sectors to format a considerable period of time is taken. The operator must start with the system during that time to pass any errors in read times. After diagnosis of a intermediate period of time (15 minutes) he due to formatted and the estimated *PCMCIA* come back with the underlying number 14,000 sectors. The next step is to format all *OS/9* programs to the hard disc.

Hierarchy

During a mind the hierarchical directory system preliminary thought should be given to the data structure. Essentially one may choose to build one master *CMOS* directory full of commands, probably a reasonable number of subdirectories or set up a directory for each application or one for *Byteplay* or *Power Mac*, etc. each with its own *CMOS* subdirectory.

This latter approach involves some duplication of files, but may be easier to use. *Byteplay* a directory called *SYL0.D*. Using

Dragon Invoicer

Craig Henderson plans a prosperous future.

If you have a printer to go with your Dragon, have you ever wondered how much more you could use it and improve on the presentation of your work?

As lately I have been keeping a much closer eye on my income and outgoings (friends and sister, putting this in good hand for when I leave school). I have written this simple computer programme print out, etc. have and added all appropriate information. You can see it to have a useful tool on your money.

When you first execute the Invoicer you will see the screen will be displayed and you will be asked if you would like to load existing copy or off cassette. Press (F5) or (F6) (correspondingly if your reply is parity). The program will then ask to explain what to do with the data and when the Invoicer is loaded you will go into the main menu. If not, you will go straight to the menu entry.

With the main menu you will have the choices printing (1) will send the current Invoicer to the printer as shown in Figure one. The printer will be set up for an 80-column printer but this can be changed by pressing option (2) or line 8 to the current month and option (3) (option 1 is divided by 4, 5, 6 or 7 for 12, 15, 20, 25, 30 days) and changing the numbers 2000070707 to coincide the appropriate month/number. Pressing (2) will take you into the EDITOR INVOIC mode. In this mode you will be asked to enter all the appropriate information build up an invoice.

The screen will clear and the question HOW MANY DAY INVOICES will ap-

PROGRAM menu.

- 1 - CLEAR SCREEN SPACE
- 2 - EXIT FROM MONTH
- 3 - DATE FOR DAY OF THE WEEK
- 30 - 40 - DATES FOR MONTHS OF THE YEAR
- 31 - PRINT TITLE PAGE
- 320 - 329 - MAIN MENU AND SELECTION ROUTINE
- 330 - 339 - EXIT ROUTINE FROM PRINTING
- 34000 - 3430 - LONG INVOICER OUT CASSSETTE
- 34001 - 34005 - PRINT INVOICER TO PRINTER ROUTINE
- 34006 - 34009 - EDIT INVOICER FROM KEYBOARD ROUTINE
- 34010 - 34014 - EDIT INVOICER ROUTINE
- 34015 - 34016 - EDIT INVOICER PRINTING
- 34020 - 34070 - LEFT PAREN PARM POSITION FOR EXISTING DATA LINES

INVOICER.

- 0 - NUMBER OF ENTRIES
- 1 - NUMBER OF DATA LINES
- 2 - POSITION OF HOME
- 3 - EDITOR EDIT
- 4 - EDITOR DATA
- 5 - DATE OF CURRENT ENTRY
- 6 - POSITION OF CURRENT ENTRY
- 7 - DATE OF CURRENT ENTRY
- 8 - AMOUNT OF CURRENT ENTRY
- 9 - NUMBER OF WEEKS IN CURRENT DATA LINE
- 10 - AMOUNT FOR WEEK IN CURRENT DATA LINE
- 11 - TOTAL FOR WEEKS IN CURRENT DATA LINE
- 12 - ADDITION INFORMATION

1 - 10001 10002 10003 10004 10005

PAPER BOARD INVOICER

FOR THE MONTH(S) OF JUNE AND JULY 1986

BEGAN	WEEKDAY	2000	1000
SETTLED	WEEKDAY	2000	1000

WEEKDAY	2000	1000
MONDAY	2000	1000
TUESDAY	1000	1000
WEDNESDAY	2000	2000
THURSDAY	2000	2000
FRIDAY	2000	2000
SATURDAY	2000	2000
SUNDAY	2000	2000
MONDAY	2000	2000
TUESDAY	2000	2000
WEDNESDAY	2000	2000
THURSDAY	2000	2000
FRIDAY	2000	2000
SATURDAY	2000	2000
SUNDAY	2000	2000

24 WORKS/2000	8	00	00	2000	40
24 WORKS/2000	8	00	00	2000	40
24 WORKS/2000	8	00	00	2000	40
				TOTAL	20000 80

ENDS

paper (Daytimes) enter the lines of text in the Invoicer which have the value:

DAY MONTH DATE AMOUNT

The prompt for a file is read and then is followed by a prompt for the month(s) of work, then the date that you began work followed by the date that you ended work. When you have done this Invoicer will clear again and the title of the invoice will be displayed at the top of the screen followed by the entry number and the prompt INPUT Day. This is the day of the entry number which is displayed. If you enter a number 1 through 12 another will be given to you. When you have done this, you will be asked to enter the month and again if you enter an invalid month you will be told. Next enter the day/end for amount. On the amount, if you put enter the figure is blank (0) will be displayed instead of a return (0) if you precede the figure by a dash (-) yourself (not a CR).

Once you have done the last input, then you will see the display as follows two lines fill the screen using keys 0-9 for the figures that you want and right arrow keys for clearing. If you need to enter a dash

DEMOGRAPHIC

DETAILED EXPLANATION

— [View on GitHub](#)

1 003 007 Date 10/1/2010 10:00

receipts in a 3-digit space or a 1 digit
receipt in a 3-digit space then alert
the user with a 10 cent per column
to be left blank. It's still a good idea to fill it
with zeros.

When you have finished another prompt is THIS INFORMATION CORRECT? and appear. Answer [Y] or [N] (or ignore by hitting the space bar) then your dialogue is over and if [Y] you will continue to the final screen.

DO YOU WISH TO BE TOLD ANOTHER
ANSWER IS IN EACH OF THE
TODAY?

Agua de la que más (M) correspondiente a

(7) Then you will go back with the passengers. You will be told where to go and you will go on to the next bus and so on until all passengers are

Press [F4] (BS) if no errors are reported and you will return to the main menu. If you have an existing service in memory which you don't want and you would like to enter another service do not press [F4] (BS) menu key as this will re-boot the machine but press [F4] (BS) and then [F1] (R) and the service will change.

Pressing [8] enters the user invoke mode. This stores the current location of memory in the cassette memory location in file as you can see from the program so be sure to print the remote code in file

customer responder: You are able to position the customer with the remote plug-in method because I have made use of the **MANTRA** and **MDR** components within the cell.

presented in chronological order. Pressing [4] initiates the edit analysis routine. Each piece of information will then in turn be displayed followed by a question mark and a freezing key. If the piece of information is correct then press [P] to freeze it and [B] to reject it. Information is sorted then under the rejected list and presented.

Pressing (E) will end the program, but when you press (R) you will be asked if you are sure. If you are then follow by (Y) and the program will end. Display the bootup message and the Beamer message will be an element of the boot up message.

If you accidentally exit the program (by pressing **Alt+F4**), click **File/Exit** if you can continue without losing the characters in memory by typing **Alt+U** to **Alt+Y**. If you own a Dragon 32, click the menu heading **File/Exit** using the **Fn** key.

Although this is a *free* program, you may not know the laws of Hyattsville and therefore I will not charge you a copy-right fee for \$20.00 including post and handling an an additional \$10.00 if you supply a C.O.D. envelope. Send a cheque or postal order made payable to George Henderson to: 100 Westwood Avenue, Welsh, Gloucester, MA 01940. Anyone who sends too little money will have the cheque returned without any refunds, unless I receive no

```

5 TITLER 11000
6 FORM 155,001:POLE 155, SOURCE E T,B,0,1
70 --> INVOICE COMPUTER --
80 DATA JANUARY,100 XPPY,HEPPAL,1984
90 DATA THURSDAY,LEFTDAY, SATURDAY
91 DATA SUNDAY
92 DATA JANUARY,1, FEBRUARY, FEBRUARY
93 DATA APRIL,1, MAY,1, JUNE,1, JULY
94 DATA AUGUST,1, SEPTEMBER, OCTOBER
95 DATA NOVEMBER,1, DECEMBER
96 CLR
110 PRINT' REVENUE REPORT FOR THE MONTH OF '
111 PRINT' INVOICE COMPUTER ' 11000
112 PRINT' *****'
113 PRINT'PRINT'WOULD YOU LIKE TO LOAD AN
114 DATAKEYS IF NO=1 THEN 120
115 IF DATA1=1 THEN 1000
116 IF DATA1=2 THEN 120
117 END CLR
118 PRINT1005, 'MAIN MENU'
119 PRINT1007, "-----"
120 PRINT1007, '1) PRINT INVOICES'
121 PRINT1007, '2) PRINT INVOICE'
122 PRINT1007, '3) PRINT INVOICER'
123 PRINT1007, '4) EDIT INVOICE'
124 PRINT1007, '5) EXIT PROGRAM'
125 PRINT1007, 'SELECT 1-5'
126 IF DATA1<1 OR DATA1>5 THEN 1240
127 IF DATA1=1 THEN 128
128 IF DATA1=2 AND DATA1=4 THEN 1240 2020-2010 2
129 IF DATA1=3 THEN 1240 PRINT 1:ROUND 34,1,1,E8
130 IF DATA1=4 AND DATA1=5 THEN 1240
131 IF DATA1=5 THEN 1240 PRINT 1:ROUND 34,1,1,E8
132 IF DATA1=1 THEN 1240 2020-2010,1000,1000,1000,1000
133 END-155
134 END-155

```



```

2530 DIM B(100),P(100),DT(100),AB(100)
2540 M=14:END
2550 PRINT:LINE INPUT"PLEASE ENTER THE TITLE OF THIS INVOICE ",I14
2560 PRINT:LINE INPUT"PLEASE ENTER THE MONTH(1-12) OF THIS WORK ",M14
2570 PRINT:LINE INPUT"PLEASE ENTER THE DAY/MONTH/DATE WHICH YOU BILLED WORK "
2580
2590 PRINT:LINE INPUT"PLEASE ENTER THE DAY/MONTH/DATE WHICH YOU RETIRED FRO
M WORK "---->T14
2600 CLR:PRINT T14
2610 PRINT:PRINT" ENTRY NUMBER ",I14
2620 LINE INPUT"ENTER DAY ",D14:CD0
2630 H=0
2640 READ B14 IF B14>D14 THEN H=1
2650 IF H=0 AND D14>SUNDAY THEN PRINT"INVALID DAY":RESTORE:GOTO 2690
2660 IF H=V THEN 2620
2670 RESTORE
2680 LINE INPUT"ENTER MONTH ",P14:PD0
2690 H=0
2700 FOR Q=1 TO 7:READB14:NEST:ZB14=-
2710 READ C14 IF C14>H14 THEN H14=1
2720 IF H=0 AND C14>DECEMBER THEN PRINT"INVALID MONTH":RESTORE:GOTO 2630
2730 IF H=V THEN 2650
2740 RESTORE
2750 LINE INPUT"ENTER DATE ",D14:CD0
2760 LINE INPUT"ENTER AMOUNT ",P14:PD0
2770 IF LEFT$B14,2<="00" THEN AB14=0:AB14=1
2780 IF INSTR(B14,":",1)>0 THEN AB14=AB14*100:GOTO 2730
2790 IF INSTR(B14,":",2)>0 THEN AB14=AB14*100:GOTO 2730
2800 D=0:41
2810 IF D=H THEN 2540
2820 H=1
2830 CLR
2840 PRINT"--- WEEKEND/DAYS: # C--- EACH":PRINT:PRINT"= [---,--- TOTAL"
2850 P=0:2:PRINTP," "
2860 IF INSTR(P," ",1)>0 THEN 2780
2870 IF INSTR(P,"0") THEN 4000
2880 IF INSTR(P,"00") THEN 2800
2890 IF INSTR("00",P)>0 THEN 2780
2900 PRINTP"-22,14:PRINTP," ",P+P+3
2910 IF P>4 THEN P=5
2911 IF P>34 THEN P=51
2912 IF P>51 THEN P=56
2913 IF P>56 THEN P=59
2914 IF P>102 THEN P=109
2915 IF P>109 THEN 2830
2916 PRINTP,"---"
2917 GOTO 2780
2920 PRINTP"256,116 THIS INFORMATION CORRECT ?"
2930 IF INSTR(P," ",1)>0 THEN 2940
2940 IF P="Y" THEN 2960
2950 IF P="N" THEN 2940
2960 PRINTP"256,116:GOTO 2770
2970 PRINTP"256,116"
2980 L=1043
2990 FOR D=112 TO 121
2991 IF PEEK(L)=0:THEN MM14=MM14+MM14*100+AB14*100-64
2992 NEXT:MM14=VAL(MM14*100)
2993 IF L=1043 THEN L=1044:GOTO 2991
2994 IF L=1044 THEN MM14=MM14*100+1:MM14=1045:GOTO 2995
2995 IF L=1045 THEN L=1047:GOTO 2993
2996 L=1047

```

```

2900 FOR OP=102 TO 127
2901 IF P=102 THEN THE 0D=THE 111 W/OUT OP=101
2902 MEETI TH141=VAL1TH11111
2903 IF L=1091 THEN L=L+1:GOTO 2908
2904 IF L=1092 THEN L=L+1:GOTO 2908
2905 IF L=1093 THEN L=L+2:THE 110=THE 111+1,1:GOTO 2908
2906 IF L=1095 THEN L=L+1:GOTO 2908
2907 IF H=11 THEN PRINT1000,"DO YOU WISH TO ENTER ANOTHER" -- MEETSDAYS
4 C---,-- EACH = 0---,-- TOTAL"1 ELSE GOTO 2909
2908 10H=INKEY$IF 10H="1" THEN 2908
2909 IF 10H="0" THEN 10H=1:GOTO 2750
2910 IF 10H="1" THEN 2904
2911 CLS:PRINT1"--- MEETSDAYS" & C---,-- EACH = 0---,-- TOTAL":PRINT1"PRINT
"ENTER ANY EXTRA LINE OF WISHED MEETING TO END - REMEMBER THE PRINTER HAS
2 80 CHARACTERS ACROSS THE WIDTH OF LAYOUT":"
2912 PRINT1"PRINT1"PRINT1"LINE INPUT A$H
2913 RETURN
2914 SAVC INVOICE
2915 IF D=0 THEN FOR OP=1 TO L0NEXT:GOTO 2920
2916 PRINT"PLEASE PLACE THE CASSETTE INTO THE CASSETTE RECORDER,SET IT TO
2917 RECORD MODE,CHECK THE VOLUME BOTTOM,INSERT REVERSE PLUG ADDRESS A KEY
2918 'AUDIOPORT' POSITION 8&C 34051
2919 CLS:PRINT1"OFF":AUDIOPORT
2920 CLS:PRINT1"224","PLEASE ENTER FILENAME TO BE" SAVED "1
2921 LINE INPUT F$H
2922 GRAB 10H,0-1,PLB
2923 PRINT1"1,0,D,H,BB,BB,BB,TE,0B"
2924 FOR OP=0 TO 0-1
2925 PRINT1"1,0B1OP1,MM1OP1,DT1OP1,AT1OP1
2926 NEXT:FOR OP=1 TO H
2927 PRINT1"1,0B1OP1,MM1OP1,DT1OP1,AT1OP1,TB1OP1":NEST
2928 CLOSE 10H:RETURN
2929 EDIT INVOICE
2930 PRINT"TITLE 1":176
2931 INPUT 0$H IF 0$H="" THEN 2940
2932 TB=0H
2933 PRINT"MONTH" & 176
2934 INPUT 0$H IF 0$H="" THEN 2970
2935 MM=0H
2936 PRINT"YEAR" & 176
2937 INPUT 0$H IF 0$H="" THEN 2940
2938 BB=0H
2939 PRINT"REGISTER" & 176
2940 INPUT 0$H IF 0$H="" THEN 2940
2941 BB=0H
2942 FOR OP=1 TO 0-1
2943 PRINT 0$HOP1:INPUT 0$H IF 0$H="" THEN 3600
2944 0$HOP1=0$H
2945 PRINT MM1OP1:INPUT 0$H IF 0$H="" THEN 3600
2946 MM1OP1=0$H
2947 PRINT DT1OP1:INPUT 0$H IF 0$H="" THEN 3700
2948 DT1OP1=0$H
2949 PRINT AT1OP1:INPUT 0$H IF 0$H="" THEN 3720
2950 AT1OP1=0$H
2951 NEXT
2952 PRINT TB1OP1:INPUT 0$H IF 0$H="" THEN 3800
2953 TB1OP1=0$H
2954 RETURN
2955 STOP
4000 PRINT1"1,01P=1,L
4010 IF P=102 THEN P=101
4020 IF P=99 THEN P=55
4030 IF P=55 THEN P=52
4040 IF P=50 THEN P=52
4050 IF P=51 THEN P=52
4060 PRINT1"1,01
4070 RETURN

```

Dragonsoft

Amiga software for Amiga should be sent to Dragonsoft, 40 Altonstone Road, Worksop, Notts NG12 3AP.

(Continued from page 11)

that they have instant beamarmour during the game. This prevents the enemy from dodging the laser, and makes your traps almost totally impotentable.

However, instead of Utopen's defence, there is a host of invincible shuttle craft which, instead of flying at you, will hover in your ship and ram it to coincide with it, unless you can stop them.

The planet surface is almost without life. Many of them are defences, some are just plain obstacles to avoid. Among the defences are the interdimensional and infinite unit robot laser-ships and force fields.

To aid your progress in the surface there are various fuel pods shown around the planet which must be flown over in

order to last your fuel levels. It should be noted that the main aim of this game is not to achieve highscoring scores, although it is possible to do, but to obtain a rough battle saddle point to put over the planet.

A score is achieved when you destroy an enemy craft. Although your score can become ridiculous in time, when your score is 'boon' over certain stages of level.

Should your fuel fall below zero on board you are at the numerous points, you will immediately die and be back at the beginning of the game.

This is a shortcoming of many games. Holo-Hub suffers from the same problem. Why programmers continue to use the inflicting regular penalties, the 'boonified' software is unwell

become very bored with the game if every time he or she dies, they are sent back to the beginning to repeat what has just gone before. It is particularly annoying when you approach a short distance from the end of the game — not that I have got that far with this one.

Utopen is a difficult game perhaps too difficult. Many scores of play and say that this provides a challenge, but the game really does suffer from this, giving you them less. Many of you will prefer to complain that this game like this with only three lives. No doubt the back-up will come up with a sensible cheat code which will dramatically increase lives.

The graphics are really not class. I would say they are among the best I have seen

although the screen and your ship do look slightly fatigued at the screen's edges. The sound and music are excellent, the title music, in particular is pleasant and will put everyone in a good mood.

Utopen is a bit like a former game for the BBC called Portwise. Utopen doesn't look anything like Portwise, but the aim is virtually the same. Another game has this same feel — Starship Fortress, it's difficult to say to get killed.

For my money Utopen is one of the best Dragonsoft games I have played since Matrix, and Jonathan Cartwright and the rest of the crew at Utopen deserve praise for the work on it.

Donald Morrison



No red herrings

Program: The Green Fish Van Scourer

Supplier: Orange Software

Price: £9.99

Test: Green Fish Van Scourer is one of the latest releases from the very talented Orange Software. Even an amateur had a ridiculous difficulty in finding this game recently down.

Greenfish is an intriguing game to play as you walk to work, you are dumped by two neopelicans, plucked and torn up and gagged and thrown in the back of what smells like a fish van. Then you are hit on the head and when you regain your senses you find your arms, ankles, stamp, cell, jeder (natively speaking) the London underground during the Thatcherite cuts and a brief spell of starvation, you unconsciously eat that packet of crisps. Though you know here I still don't know.

you got there — One Of Our Correspondents

It sounds as though somebody has pretty eventful living recent. The game starts off in the campsite with no big opening location and into scurrying beneath a pile of straw.

The only usable object is a blanket (BLANKET BLANKET) which there is nothing special about the location with no hole apparent, the only direction is that to another part of the cell where there is a pillar in the ceiling. The only exit would be to the bar, but no, you have nothing sharp in the inventory you know by the end of the game.

Not in the last location, and I never managed that the only way out was under that pile of straw. Though you know here I still don't know.

— Jonathan Cartwright

vanish can include such oddments as a stroboscope, video cassette, remote help device, key, oil can and the usual likelihood commands.

However despite the inclusion of verbs like 'let' the game will not tolerate violence — or receiving a visit from the police, the game will stop and the computer will add start. Don't panic — it's not a bug. As soon as you press a key the computer will return with a warning not to use violence.

There are a large number of locations in the game, and many of these centre on moments of humour through the game's horrific and dirty language. In game 14 (Afternoon off) an example of a possible password here comes through a text file, 'Author's Agent gets her blue crystal' — Ed.

The game apparently is not what it says it is, but we assume 'green fish van scourer'.

author has managed to keep his description fairly deleted and the score is quite exciting out.

Although the game operating in basic, it plays at a reasonable speed. As with most basic games, never at a well presented, but the basic being disabled as well as the LIST command.

There seems to be a slight bug in the game as every time you type END you bite your lip and eventually die regardless of whether or not you are eating anything at the time.

If it is a good well thought out game with a totally original idea behind it. Not one part exploited by other software companies. Get yourself a copy of the game and have a look.

Donald Morrison



Communications

Adventure trail

Problem: Can anyone supply me with a copy of the software for using the Gemini Database program? Costs reimbursed.
Name: Mark Marroway
Address: 14 Granary Close
Bathford, Bath BA2 7AU

Response: Help, Greenfish DATA, DATA! Database will not read .DBF format or cause disappears and keyboard goes dead. Where has the company gone?
Name: Paul Edwards
Address: 41 Dunmowway

Response: My Commodore 64/128/1600/2000/2000+.

Problem: Wanted my Holland port programs.
Name: Peter Marsh
Address: 37 Collette Walk,
Preston, Lancs PR6 8QD

Answer: The Commodore 16/128/1600/2000/2000+
Problem: How do I load by boot or download HELP?
Name: Neil Devons
Address: 4 Glendale Drive
Doveridge, Shropshire SY2 5AS

Colour connection

Ray Deakins makes a hardware move to balance the Dragon's colour

THE December issue of *Dragon Answers* contained a letter asking if it is possible to correct the colour balance on a CD. The following short article might just help them, assuming that the writer of the letter has already read *Adjusting the LZW Processor*—no effect.

The Delt (and some of the later 32s), use a semi-elliptical capsule instead of the flat valve that appeared on the 32-CC300 and 314. The valve of the shoulder is located between 2 and 32 positions. (Mackie part no. 1W1-2001) The component is located as the main circuit board top left hand side immediately below the crease 30.1. If you are familiar with a soldering iron then you will

Take very long to make this modification. With the new capacitor in place and the trim-pot set, switch on and adjust the trim-pot with a non-magnetic insulated screwdriver until you get the best colour response.

Changing this connector has improved the colour display on the two Dragon 32s. I have modified this at the very least as I have 4 power boards and the Amstrad (LM1010 modulator). The issue 3 power boards have the LM1010 modulator and a slightly different circuit. Although I have no memory, this should not worry. I suggest you get the Amstrad and have the problem sorted out. I suggest that anybody experiencing

making sure that healthworkers should only go abroad if they are fully confident in their ability to do the job and measure it if necessary.

The following short program will help to adjust the colour. Use the program to full advantage. It experiments with your TV's set up correctly so colour balance etc. Display items can be altered by changing $Y(0)$ or $Y(1)$ during colour.

The National Dragon Boat Group in Preston may be able to help with dragon boat equipment required.

Indeed, this is the year of the Dragon! Let it be a good one.

www.oxfordjournals.org

Write: ADVENTURE

Pete Gerard rings changes on themes

I received an interesting letter recently from one Robert Daugherty in Belpre, Ohio, who writes of the Paramount and he'll let it pass when he says: 'I've been trying to write my own adventure recently but haven't managed what to do or how to get started doing it. I have developed a fairly interesting process (quoting "Take the long road and don't follow the map") but then ends up with a general plan for the plot and ends.

Given the encouragement I must confess at first sight to an amateur pastime by Robert that of knowing the basics (and possibly more) but not being quite sure how to go about putting it all together we'll allow him room to try and help you all along a little.

Choose your system

Most people who write adventures at first end up developing a system of their own and this is why everything is a bit off kilter and not fitting everything in a box. or they use an interactive writing system developed by someone else and have to load all of it in memory then print out or think so that the adventure they're developing may well be able to be written by using that particular system. It is not very common up until I take this advice you to keep these characters to another of the systems in use for reasons of coping with that.

So first off I suggest that the game you're going to be writing can either be written completely if you're going to be submitting it directly rather than the usual strong usually other games by the company and makes sure that when you're sending them off it's in with what they have already done. Otherwise you'll get a rejection along the lines of 'your game is good but our system won't be able to handle it.' This is a real mistake that may probably be the idea but who will try to open the lines and emerge in as technical have trouble to cope with whatever requirements you've introduced. And why should they? For every adventure that goes into their way of programming they've probably got half a dozen ideas that will.

For example and usually unoriginal example consider the easy and problem of trying to find a key to open a locked door. Having found the key the player might reasonably be required to go back to the door and type in something like OPEN DOOR. A simple line of code like

IF key earned AND correct location AND door locked THEN UNLOCK door

will sort everything out. Most adventure systems can be expected to cope with it something like that although I'd add to a paragraph of remarks for the particularly failing games that have increasingly two parts

of doors and hundreds of keys scattered about the place forcing you to spend an evening finding the right one for the right door. Then when you do and type in OPEN DOOR the program responds with the error IS LOCKED. I know it is stupid, that's why I've spent half an hour finding the key and am now telling you to open the damned thing.

From this problem, slightly altered one given and if you are going to have a locked door you'd better put a guard line preceding before so I had the player get some slight feeling of reward after opening it. Perhaps make it a regular or even a single concerted passage. The lock might be covered with a panel that is rusty with age and covered in mud and when you do find some oil and find it you then discover that there is something stuck inside the barrel of the lock and you have to drag it out. A little subtlety goes a long way.

That's all the difference to the player



The many adventures though seem to rely on locking and unlocking things in order to succeed. Does this really reflect most of the games that they need something to be unlocked at some time or another as another of the getting you started ideas frightened but have not looks altogether. If they're made the game harder to write but it will be a much more original.

And since originally seems to be the name of the game these days, leave out mazes as well. They might be programs though they're not specifically that kind because it is extreme.

IF PUPPY(10) THEN CP=PyCP(10)
ENDIF 10

Or something similar. In either it is essential to get the player moving around, in the middle of a maze, of the many Piggy-banks. The number of locations and the number of available keys CP in the current location, and not in the location that the player

wants to go to. However moving around within a maze could easily be achieved by simply having no or so locations that all have the same location description such as 'Piggy-bank' instead of 'location 10' and alike to quote the original. Then, whenever the player moves the location description changes the writer and the player has no idea whether the move has been advantageous or not. This sort of muddle relieves the player of dropping objects and keeping your progress free. It is the objects that tell them where you move than you in little separate boxes. On the other hand, the programme becomes things more difficult for the player by having 'unseen' like this in the CP(10) routine:

IF CP(10) AND CP(58) THEN CP(10)=CP(57) message

That's a mess but the maze of locations CP(10) and the empty CP(57) because when the player moves a location that has no name would mean that the object had vanished, and the message should be something along the lines of As you drop the puppy a piggy appears in a pool of water and says I, saying that he has outside the maze for self keeping. He vanishes via CP(57) message. Thus the player can now no longer drop the puppy by dropping objects.

A logical maze

Whether or not you have a maze is of interest up to you. I don't like them myself but some people do actually seem to enjoy solving them. But if you do have a maze try and give it a purpose. So many of them seem to be the exercise of being there and being a success with no reason behind the sudden appearance of a maze in the middle of nowhere. Make it a constructive maze (a London school might use Hampton Court) the reader with something at the centre of it perhaps. Player is to do something that he's achieved something by solving a maze.

Another old chestnut which can be given a variation on a theme in order to get the building adventure game writer started. In the perennial problem of logic and stats. Many, many games have you having around looking for a book before you can go into particular set of circumstances. The reason you won't be able to see where you're going is the darkness taking you to better consumed by a monotonous Cross

IF CP(58) AND CP(10) AND PD=1 THEN PRINT message

That sort of line could easily be added to the programme routine with location CP(10)

20 being the dark ones. If the variable PG is set to 1, then the player has not found a light source, and the message could read something like this: "You try to move in the dark but trip and stumble, almost knocking yourself over as you fall into a thick pit. The last thing you see before you fall from sheer terror are the burning eyes and snarling jaws of some unknown beast!" Peter wrote:

Some adventures do allow you to move about in the dark without falling down everywhere, but of course you cannot see items that might be hidden on the ground. This is why everyone's eyes adjust to the dark eventually so a solution might be to make the player stay in the dark locations for a set number of moves before they can use the gathering command to fill consciousness with a rock. Or you may have to consider having a light source that goes out after a certain number of moves.

Then again, you might care to have something totally different. One adventure

of misfortune had a chest that had been exploded, and there was also a torch. Unfortunately, the torch didn't work and never would work, so some other alternative had to be found. This alternative took the form of a gasoline lamp, which would hopefully provide light by day and prevent your face from burning in return for a spot of heat. Admittedly this was the length of time taken in the process until the player's eyes adjusted slightly and were able to make out a set of levels hidden in one corner of a particularly dark cave. Tennis anyone? It was a strange adventure!

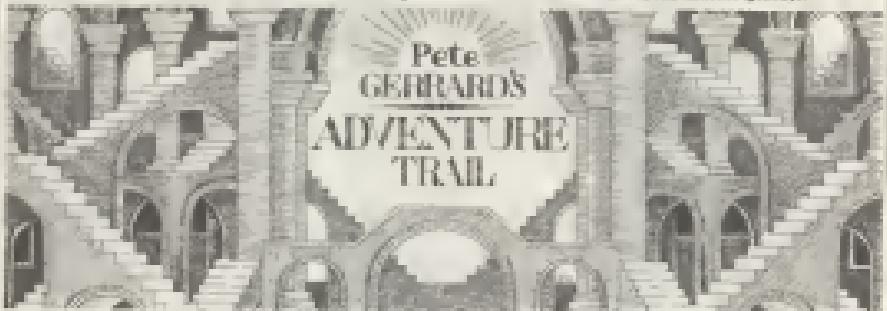
A troll's plaint

One last point to consider is the tangerine to the world of another because that could easily be changed in order to add another dimension. The tangerine part being, such as a field, before you pass and will tell you just until you give him something.

IF CP=48 AND OB(noll)=OP THEN PPRT message

If the troll is blocking your path and it is located on CP, then give a message to the effect that "The troll obscures you from the other side of the rocky old bridge, and refuses to let you pass. You might be burning your bridges in that if you only try to be bold." The last detail is the person playing with her bridge, and stamping out the fire before it can take hold.

Admittedly the idea that you have to give the troll an oil to one that you want to use again later so that the player will have to think of some way of getting a back afterwards. But you could do the same sort of problem in a totally different way. You could invite the troll for a drink or something, and when he gets the tangerine and reaches the door it is as if every other tangerine been in there could find that there were no tangerines at the door and so go elsewhere instead. A drink, leaving you plenty of time to scour around the bridge. It is a nice rope bridge you could roll it up after you had thus proved the troll getting back across afterwards. All variations are a possibility, and with that (goodbye!)



Professor Davrocks! one again after his terrible writings against people who should know better and as promised we have the old boy another nice addition to an adventure that I got in a number of questions about, namely Professor of Gooch, Thanks to Michael Edwards and H. Stephens for giving the good Professor a helping hand those occasions when the test disturbed slightly.

Dear Diary

Pyramids and sandstorms (or is that sandstorms and pyramids?) Makes me sound like some sort of aquatic mammal. A herd of sandstorms approaching like the last (I saw last time Caine) abounded on my last (I nearly died) and one cannot help but wonder what Bader would have made of it all. Still, I am not to mention why and having left the admirable country behind (about enough egg, but does my mother too hard to ensure that an old fogey like him refers to as a "good father") I had the sandstorms do a blunder slightly and had to grapple pose for keeping balance. However, however! Let the sun sets in (I had a above) and knowing that such an unpredictable night comes in such little time I had

held of the tango and went to a nearby pool. A curious boy and some liquid of a rather dubious nature from the cabinets soon came into my possession, and after rinsing out and out, fairly than said again I was on the about to pause for breath and found myself dropp

ing! I unbuttoned a somewhat small key and after taking it out with a wrench I was digging with gusto in the leather Davrocks jacket and told me that something of value might well be revealed immediately. A large hole was revealed. I began to crawl and upon going into it I found a door. I was unshackled that I can tell you and immediately retreated again. There I dropped the shovel and took hold of a stone. Something about it caught my fancy can't say what. I unlocked the main door and went in, looking vaguely guilty as I did so for no apparent reason. Perhaps it is that few minutes in most of us, at being caught where one ought not to be. What would the court say? It's a bad argument I dropped both keys and to my thoughts. I was in the Pyramids of Giza, and immediately took a red before pressing on further. It would not do to be caught. Unshackled



I'd stayed up in a northwards direction and thought and planned it. Progressing by turns northward I headed north then west and to and behind I found a state highway leading south. I can tell you, A South West road, south, and south once more and I was in uncharted places. A little look of mine, I soon saw in my own imagination I could not help but my own interests bypassing the state. Not that I aware of, because I chose this, but there you have it.

I studied the map again and found some coast and areas, although I had to look twice before the others noticed themselves. I made a plan to go to the south of the Holiday Inn Gold Coast. The others looked strangely at me, and upon further examination I was able to find a roadhouse. That could come in useful at the next bridge meeting. Having got the roadhouse, I arranged a passage and immediately headed north and west. Some strange graffiti could be found here (I saw the word graffiti, then graffiti became uncharter and avoided and upon reading it I decided to grip the stone and sacrifice. The stone was becoming something of an unwanted burden anyway. A blue jay attracted my attention, jolted road, and road never help but read to the far left of the English language and I took it before proceeding further.

I went west then north where I saw no destination right. An option was looking slightly at west in my vision at the unchartered situation on my pathway. I stopped the jay, afterupon the option unchartered west and I presented me with a jolt. Happily enough I took a hand full of the paper as I noted artlessness an artlessness that really failed to resemble that glorious example of artlessness of Marble Arch. On going east I uncharitably dropped the paper and in my haste to find it I turned west and north. Somewhere I uncharitably to lost track of the Ruble but I was never much of a referee and James Gandy never gave me less of my musical talents than playing him.

Road as road

I proceeded west and south and returned to the unchartered uncharter. Some infrared instinct seems to constantly drag me back towards it. I cannot think what it all might mean. I went down, being my best slightly as I did so, and deserved to have my arm against the coast but I was trying another direction. It was a ruble but clearly not owned any great value and probably not something that could be worth taking down the Polyester River for evaluation. What happened my mind caused me to be less than my usual control and was more like having leaves, and I immediately thought of first placed liquid from the can. I puffed water all over them as if extinguishing them and was to get what was obviously an immensely important discovery. Because I shouldn't consider although I may be wrong, I am integral as

part I could have known, and deserved infrared at a time that was lying down. I did a double take, looked again, and then was an iron glove. The sort of thing that Mike Tyson would never doubt, although he would over the day he crossed me I can assure you. Northward I believed to happen, as I have a very benign nature. And still not my intention and an giving little more I thought of examining what I was able to ascertain that it had some goldenrod that were most likely my self. National Health Service issue. I reached this to my gathering lot of goods.

I performed the usual task of freezing sweat and sweat, but in my hands I sometimes managed to catch my own on something, a pathogen from the wall. I hasty and suddenly in the pull tall from my grip. Dried hammer edges, these still could return to if I turned north as fast as I could possibly go and all further I went. In my efforts to escape. Feeling stuck I clutched the iron glove as a suitable source therapy and my hands became co-anchored with proliferation in my right hand finally dropped the glove and I took my patience rapidly as preserving his and its before I regained the glove and proceeded. I was going so fast that I almost collided with a deer and a rapid motion of my hand performed an iron surging never feel excepted it. I clambered to the unchartered observer if probably looked as if I were hitting the deer, and accidentally removed the glove or lot of protection. I didn't think that will have any further use for it.

Germed to death

I found a road and my old training told me at the could be of uncharter use so not really though I clutched it with me. I headed south and south again back to where I started my headlong flight, and went to the water. By the riverbank I stumbled slightly and we were forced to go to the ledger a second time. I know the rope up is the ceiling to help me get up there and find some of the most ever items of trash, giving me aid for my uncharter. What could possibly bring this appearance than unchartered before start. The sky was northeast, and feeling somewhat pain to Quicks against Quicks I threw the ring. Fortunately my arm was good and my bone was true and when the hand I possessed a supportless my dependence on it remained an offhand myself just on the back. I did not have the offhand.

I headed south and assumed the strange looking collection of rubbish in front of me. An explore? In my form I was unchartered this area, although the labor act was perturbed with power little disease as I had certainly related the end of his job. For my pains I was blessed with a pen and a stamp, and after that the house took was completed. I went west and down dropping further down as I did not neglect my presence every time. My red hair did not rather me to be a bunch of bushes but it did, because I am rapidly becoming as

I am forced into living a human shaped life dream.

My journeying became ever more as though of a wild westward than than to an uncharter. Sometimes staring at my hand was given me, of that I am sure another entity took my hand, cause I was on being seen and two smaller bodies and the field. Upon completion of the task, and if the cost plus exchange is concerned that I am no longer the arbiter of my soul. I dropped the raw and took hold of the solitude that had appeared. I stepped out suddenly to the wind and the somewhat ludicrous, although where I could carry my luggage no more and so dropped rapidly until reaches out car and support. I am always younger and after a bit goes to catch my breath I took a straw in the wind and titanium ad north and west again.

Beetling home

I returned my see and after unchartered greatly to the south I assumed both my keys, thinking the good land that I once had appeared to steal them. Once more I unchartered unchartered unchartered and went down them about, then Mike Taylor Once more these did not go and proceeded to my cap. Following when I opened the chest and took out the steep, impression looking dress that I have ever been my pleasure to behold. Feeling somewhat foolish, and rather as if I were at my own best friend's home, I pulled the sheet. I went to the piano, opened my eyes I thought the bars and was ready to stop the unchartered. Realizing the energies for safety I unlocked a coffee before stopping both keys, again a friend time from the come past a beetling, which naturally I took.

I went back to the window, got a bar by the curious other, leaving shown only at Dordogne, and then performed the most extraordinary series of movements, so I could still dress unchartered unchartered only did them as I performed them went down, down, went down, north, and back unchartered. I went through the door unchartered unchartered and was forced out both because I called my kiss. On leaving the door I discovered a gun and I took it from me. I took a look at the lightning ray flashlight on the glass as I went. What I thought was a scurrying butterfly turned out to be a stationary insect, so I took it. What there was again re-lighting my already fully fully flashlight as I walked. Unchartered. Walking out, up went north and east before ending up right here at the business activity. Find again, and added to my collection by sounds can be down and a word. A word of unchartered, that is not the most upon louder than intended. Not on saying the word 'sister', I said I unchartered home and my hand held day was complete.

What an interesting time he does have to say! See you next month.

Is this a record?

Gordon Lee really is going round in circles — almost

part of nature probably familiar with the old catchphrase: "How many grooves are there and a geographer's answer?" The answer, of course, is *infinity* — one on each side. A similar problem exists. How long does the stylus travel while playing one side of an LP record?

Solving these depend on patches. Is the way that the questions are put. However, a person who goes through the first of these is more likely to be inspired by the second. The first is both dependent on the person leaving that one side of a record come to all its ends and purposes, a single spiral groove which commences at the outer edge and then spirals in towards the centre. Consequently when asked the second question, the temptation is to try to calculate the approximate length of this spiral track and leave this as the answer. In fact, the true distance that the stylus travels is somewhere in the region of four miles! — that is, the distance that it travels from the outer edge to the inner most groove on the disc. That is, the record is rotating beneath the stylus does not affect the distance at all (unless — as we will see it mostly towards the centre).

The spiral, based on a typical groove phonorecord is of the type known as an *Azimuthal spiral*. That is, the locus of a point which rotates around a central point at a constant rate. Consequently the distance between adjacent radial lines of the spiral is constant. (This I know, that for certain technical reasons in the manufacture of records the distance may vary slightly depending on the dynamic range of the music being recorded — but you get the idea). A child on a playground roundabout who walks at a constant speed

along one of the radial handles would never understand the spiral motion in the general...

300 PH00041: BORN100, 01 POLS
310 PH0041: B1 10:200:19701:R+RD
320 FDR S=0 TO 1 STEP 0.02
330 R=0.0, 0.0
340 CIRCLE14, F7, R, 1, 1.0, E
350 R=0.0
360 IF R>0 THEN 160
370 MEET1 GOT0 120

A reasonable approximation of an azimuthal spiral can be drawn on the Dragon's screen using either of the two subroutines given here. Looking first at a rather more straightforward method of us-

300 PH00041: BORN100, 01 POLS
310 PH0041: B1 10:200:19701:R+RD
320 F1=0.1, R=0.0
330 S=0.01:R=0.01:RD
340 J=0.0, 0.0
350 Circle14, R=1
360 R=0.0, 0.0
370 L=0.01:R=0.01:RD
380 F1=0.01:R=0.01:RD
390 F1=0.01:R=0.01:RD
400 R=0.0, 0.0
410 J=0.0, 0.0
420 R=0.0, 0.0
430 R=0.0, 0.0
440 GOT0 320

ing the computer's circle command to draw small circle segments, each time reducing the radius *R* to move the

stylus. (I have omitted the *Line* command to keep the program as short as possible). Let us call length the "length" and *angle* the "angle" between points of saying if *R* had a value of *Miller* would every day impress until you had seen (Doodling up in the dictionary) this. Whoa! got my dictionary?)

May winners

Well, we had a pretty massive entry this month. This is what comes of having it be known that Dragon Lee and the editors are available for offers of marriage. We were only joking, incidentally you don't come out now unattached — comment that under that table of course.

I shall call. However I shall put off till after the prizegiving which goes like this: two draws, one winner. 1. A *Barcode* of Action, T. Fawcett & Heslop, D.J. May of Middletough, P. Morgan of Bristol, P. Weston of Weston-under-Edge, A.J. Westwood of Nottingham, E.A. Neaman of Thame had the letter but I know who

has it towards the centre. This is not a true spiral but it consists a series of arcs of circles but the end result is quite interesting. Interesting effects can also be obtain by dropping ellipses/spirals. Therefore by altering the *height/width* ratio of the *CIRCLE* command in the 160 page titled the Dragon's manual describes how this is done.

A more finely tuned spiral can be obtain by using listing two which uses the sine and cosine functions to compute the co-ordinates of each point of the spiral. In both these subroutines *P1* is used to control the "pitch" of the spiral and can be adjusted to adjust the size of the spiral the co-ordinates of the earlier.

Another diagram that obtained by substituting the template of a circle, imagine that you are considering a large dog who unfortunately is tethered to a tree by a leash along rope. By keeping just out of reach of the dog and by moving round the tree, it should be possible to make the dog wind the rope around the tree. The path that would result would be the locus of the circle represented by cross sections of the tree. Here is the tangent of the generating circle that is decreasing at a constant rate (represented by the rope) rather than the radius as in the Azimuthal spiral. To the naked eye these spirals would look very pretty similar, the difference being mainly in their methods of construction.

To complete the picture another should be made of a third type of spiral, the logarithmic spiral. This is the most widely found spiral which occurs in nature, from the very small fine arrangement of the seeds in a sunflower to the very large rib shape of many of the spiral galaxies in

your E.A. J. Bellifil of Thetford, Andrew Henderson of Bexleygate and S. Green of Chichester.

We have also created a special category for Dennis O' Malley's spiral, disqualifed because he didn't actually enter the competition (but the rest of us were all too good to leave his log spiral a mention). But seriously, Dennis O' Malley, O.K. but no answer? Clearly your thoughts are on the Tournament of the Infidels, or something in that vein.

One question for others and take away a little knowledge. The position Dragon's round the Old Clock Tree?

All these persons will be receiving a copy of *Basic Books* from Dragon's Software in their honour. I ignore the remark in last month's editorial. That's because it's for the ones

Solution

See opposite

Rules

Have you established a new record for the most effort and most elegant entry to a recording competition from the planet Earth and/or an LP record played below the level of human hearing? Do you put all in bursts of nearly pure, complex sine waves? Please your answer and program in a piece of paper marked AUGUST 1985 add any famous last words and post it to us. That's it could be yours.

